Summary Report for ESA-230-3

Company	Kohler Co.	**ESA Dates**	November 11 to 13, 2008
Plant		**ESA Type**	Pumps
Product		**ESA Specialist**	Gunnar Hovstadius

IDENTIFIED PLANT BEST PRACTICES	
1	Plant has several persons responsible for energy improvements
2	Engineering data readily available
3	Knowledgeable personnel
4	Good safety awareness and program
5	Some applications are using variable speed drives
6	Systems are shut down when not needed through automation and procedures
7	Vibration monitoring is part of a predictive maintenance program

Introduction:

The United States Department of Energy (DOE) "Save Energy Now" program completed an Energy Savings Assessment (ESA) November 13, 2008 at the Kohler facility. The DOE Qualified Specialist/Energy Expert conducting the pumping system ESA was Gunnar Hovstadius of Gunnar Hovstadius Consulting LLC, Westport, Connecticut.

Objective of ESA:

To train company/plant personnel in the use of the DOE PSAT software. To perform a "training assessment" of plant equipment to demonstrate how to use the tool and find savings in the process of doing so.

Focus of Assessment:

Pumping systems.

Approach for ESA:

The first day was spent in training, and the second two days were spent in the plant observing pumping systems.

General Observations of Potential Opportunities:

The following section briefly discusses the projects identified for additional investigation or implementation. A qualifier is assigned to each project – *near-term, medium-term* or *long-term.* These descriptors are identified as follows:

- *Near-term* opportunities would include actions that could be taken as improvements in operating practices, maintenance of equipment or relatively low cost actions or equipment purchases.
- *Medium-term* opportunities would require purchase of additional equipment and/or changes in the system. It would be necessary to carryout further engineering and return on investment analysis.

- *Long-term* opportunities would require testing of new technology and confirmation of performance of these technologies under the plant operating conditions with economic justification to meet the corporate investment criteria.

Near-Term Opportunities

- In a multi-pump systems, shut off additional pumps that are not necessary.
- Identified water supplied at a higher pressure than what is required by the process. Reduce supply pressure by either modifying the pump or reducing the pump speed and eliminate pressure reducers.
- Found spray pumps running in manual mode which would not have been running if they were switched to automatic control. Pumps switched to automatic control.

Medium-Term Opportunities

- In a cooling water circulating system without static head, install a variable speed drive for regulating system flow to match the process load.
- Identified that high pressure boosted water is only required for one building and not the entire plant. Install a small boosted water pump dedicated to the one building and run boosted water at a lower pressure for the rest of the plant.

Long-Term Opportunities

- Boiler feedwater pump oversized relative to current operations. Replace with a smaller pump.
- Replace existing hotwater circulation system (3-way values and single speed pump) with 2-way flow control valves and a variable speed drive pump.

Management Support and Comments:

The facility is dedicated to reducing energy consumption throughout its plants worldwide.